

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for measuring ATP-dependent transferase enzymatic activity comprising:

(a) providing a ~~single-admixed~~ reagent composition comprising a detergent, a luminogenic molecule and a chemostable luciferase, wherein the detergent selectively stops ATP-dependent transferase activity without substantially affecting chemostable luciferase activity;

(b) incubating a first reaction mixture comprising an ATP-dependent transferase, ATP, and a transferase substrate for a first predetermined time period under conditions effective to allow for a transferase reaction to occur;

(c) contacting the first reaction mixture with the ~~single-admixed~~ reagent composition to form a second reaction mixture and incubating the second reaction mixture for a second predetermined time period under conditions effective to simultaneously stop ATP-dependent transferase enzymatic activity and allow for a bioluminescent reaction to occur; and

(d) determining transferase activity by measuring luminescence of the second reaction mixture.

2. (Currently amended) A method for screening a compound for its effect on ATP-dependent transferase enzymatic activity comprising:

(a) providing a compound for screening;

(b) providing a ~~single-admixed~~ reagent composition comprising a detergent, a luminogenic molecule and a chemostable luciferase, wherein the detergent selectively stops ATP-dependent transferase activity without substantially affecting chemostable luciferase activity;

(c) incubating a first reaction mixture comprising an ATP-dependent transferase, ATP, a transferase substrate, and the compound for a first predetermined time period under conditions effective to allow for an ATP-dependent transferase reaction to occur;

(d) contacting the first reaction mixture with the ~~single-admixed~~ reagent composition to form a second reaction mixture and incubating the second reaction

mixture for a second predetermined time period under conditions effective to simultaneously stop ATP-dependent transferase enzymatic activity and allow for a bioluminescent reaction to occur; and

(e) determining the effect of the compound on ATP-dependent transferase activity by measuring and comparing luminescence of the second reaction mixture relative to a control mixture having no compound.

3. (Currently amended) A high throughput method for rapidly screening a plurality of compounds to determine their effect on ATP-dependent transferase enzymatic activity comprising:

(a) providing a plurality of compounds for screening;

(b) providing a ~~single-admixed~~ reagent composition comprising a detergent, a luminogenic molecule and a chemostable luciferase, wherein the detergent selectively stops ATP-dependent transferase enzymatic activity without substantially affecting chemostable luciferase activity;

(c) incubating a plurality of first reaction mixtures, each first reaction mixture comprising an ATP-dependent transferase, ATP, transferase substrate, and at least one compound, for a first predetermined time period under conditions effective to allow for ATP-dependent transferase enzymatic reactions to occur;

(d) contacting for a second predetermined time period the first reaction mixtures with the ~~single-admixed~~ reagent composition to form a plurality of second reaction mixtures under conditions effective to simultaneously stop ATP-dependent transferase enzymatic activity and allow for bioluminescent reactions to occur; and

(e) determining the effect of the compounds on ATP-dependent transferase activity by measuring and comparing luminescence of the second reaction mixtures relative to at least one control mixture having no compound.

4. (Original) The method of any one of claims 1, 2, or 3 wherein the transferase enzymatic activity comprises kinase activity or ion channel/pump activity.

5. (Original) The method of claim 4 wherein the transferase enzymatic activity comprises protein kinase activity, lipid kinase activity, polynucleotide kinase activity, or sugar kinase activity.

6. (Original) The method of claim 5 wherein the protein kinase comprises a Ser/Thr protein kinase, a protein tyrosine kinase, or a protein lipid-dependent kinase.

7. (Previously presented) The method of claim 6 wherein the Ser/Thr protein kinase comprises cAMP-dependent protein kinase (PKA), calcium and phospholipids dependent protein kinase (PKC), cGMP-dependent protein kinase (PKG), calcium and calmodulin dependent protein kinase (CaM KII) or a dual specificity protein kinase.

8. (Previously presented) The method of claim 7 wherein the dual specificity protein kinase comprises mitogen activated protein kinase(MAPK) or mitogen activated protein kinase kinase(MEK).

9. (Original) The method of claim 6 wherein the tyrosine kinase comprises Rous sarcoma related protein kinases(Src), or Src family protein tyrosine kinases.

10. (Original) The method of claim 9 wherein the Src family protein tyrosine kinases comprise Src, Lck, Fyn, or Lyn.

11. (Previously presented) The method of claim 6 wherein the tyrosine kinase comprises epidermal growth factor receptor(EGFR), platelet derived growth factor receptor(PDGFR) or steel growth factor receptor(c-KIT).

Claims 12 and 13. (Cancelled)

14. (Previously presented) The method of claim 1 wherein the detergent comprises a cationic detergent, anionic detergent, or zwitterionic detergent.

15. (Previously presented) The method of claim 14 wherein the cationic detergent comprises dodecyltrimethylammonium bromide, cetyltrimethylammonium bromide or benzyldimethyldodecylammonium bromide.

16. (Original) The method of claim 15 wherein the cationic detergent is dodecyltrimethylammonium bromide.

17. (Previously presented) The method of claim 14 wherein the anionic detergent comprises SDS or deoxycholate.

18. (Previously presented) The method of claim 14 wherein the zwitterionic detergent comprises sulfobetaine 3-10.

Claims 19 to 21. (Cancelled)

22. (Previously presented) The method of any one of claims 1, 2, or 3 wherein the luminogenic molecule comprises D-luciferin or a luciferin derivative.

23. (Cancelled)

24. (Original) The method of any one of claims 1, 2, or 3 wherein the transferase itself is being phosphorylated or the transferase substrate is being phosphorylated.

25. (Original) The method of any one of claims 2 or 3 wherein the compound enhances transferase enzymatic activity.

26. (Original) The method of any one of claims 2 or 3 wherein the compound inhibits transferase enzymatic activity.

Claims 27-47 (Cancelled)